

Conservation Leasing in Washington State—Partnerships for Improving and Protecting State-owned Aquatic Lands

Jay Udelhoven

Washington State Department of Natural Resources

Jacques White and Betsy Lyons

The Nature Conservancy

Keywords: restoration, enhancement, preservation, public lands, leasing

Abstract

The Washington State Department of Natural Resources (WDNR) is the proprietary manager of 2.4 million acres of state-owned aquatic lands. In addition to other aquatic lands throughout the state, state-owned aquatic lands include nearly all of the bedlands and 30% of the tidelands within the Puget Sound, Strait of Juan de Fuca, and Strait of Georgia. The WDNR manages the aquatic lands for public uses, water-dependent uses, natural resource uses, revenue generation, and environmental protection. The WDNR developed a Conservation Leasing Program as a component of its environmental protection efforts. The Conservation Leasing Program serves as a non-regulatory mechanism to achieve preservation, enhancement, restoration, and creation of state-owned aquatic lands. Research and adaptive management are also necessary elements of the Conservation Leasing Program. As with most other uses on state-owned aquatic lands, the WDNR may authorize conservation activities under a lease or license. The authorization transfers certain property rights from the state to the lessee, details the conservation activities, and identifies long-term measures of success.

The presentation will offer a brief overview of the development phase of the Conservation Leasing Program and discuss its implications by highlighting a pilot lease with the Washington Field Office of The Nature Conservancy (TNC). TNC is developing a pilot conservation lease that will focus on the restoration of Olympia oysters within the Puget Sound. The presentation will also discuss challenges inherent in making a philosophical shift that places conservation activities on equal footing with traditional commercial uses.

Introduction

There are approximately 1.9 million acres of aquatic lands within the Puget Sound, Strait of Juan de Fuca, and Strait of Georgia. Nearly all of these submerged aquatic lands are owned by the state of Washington and managed on behalf of the citizens by the Washington State Department of Natural Resources (WDNR). While there are local, state, and federal agencies that issue regulatory permits for activities that take place on state-owned aquatic lands, the WDNR is responsible for the long-term planning and ultimate proprietary authorization for many activities that take place on or over the aquatic lands.

The WDNR is directed by Washington State Statute (Chapter 79.90.455, Revised Code of Washington) to manage state-owned aquatic lands for five public benefits:

- Public use and access;
- Water-dependent uses;
- Renewable resource uses;
- Environmental protection; and
- Revenue generation, when consistent with the first four benefits.

Most activities are authorized on state-owned aquatic lands by the WDNR through proprietary mechanisms such as leases, easements, or licenses. The WDNR has authorized approximately 3,700 activities on aquatic lands throughout the state. Historically, uses that the WDNR authorized focused on public use, navigation and commerce, renewable resource production and extraction, and revenue generation. The environmental protection directive, however, was rarely, if ever, achieved through a lease-type scenario (i.e., with a landlord and tenant). From 2001 to 2004, the WDNR and The Nature Conservancy (TNC) collaborated to evaluate whether environmental protection on publicly owned submerged aquatic lands could be achieved through leasing. The result of the evaluation was the development of the WDNR's Conservation Leasing Program and the initiation of TNC's pilot conservation lease in Woodard Bay.

Conservation Leasing Program Development

The WDNR examined its statutory authorities and policies for managing state-owned aquatic lands while TNC examined authorities and policies for coastal management agencies throughout the United States (Marsh et al. 2002). Through the examination, the WDNR determined that existing statutory authority allowed for the development of a Conservation Leasing Program as part of the environmental protection directive. Through the research of other coastal management agencies TNC found that most coastal states have leasing programs for marine lands. Many of the leasing programs are limited to production-oriented activities, but some states do lease for conservation-related activities.

Developing the Conservation Leasing Program in Washington State was primarily a task of assessing and documenting how existing authorities, processes, and lease documents can be used to authorize external entities to perform conservation activities on state-owned aquatic lands. Department guidelines were developed (WDNR 2004) that outlined the legal interpretations and processes required for the Conservation Leasing Program and a training session was given to WDNR staff. Surprisingly, technical issues were not the major concerns identified during the development of the program. Instead, numerous internal philosophical issues formed the greatest share of hurdles to be overcome.

During the development of WDNR's Conservation Leasing Program, many philosophical questions arose, such as:

- Is conservation a "use" that excludes other uses?
- Are there other authorization or partnership mechanisms that serve the same role?
- Will public trust doctrine interests be infringed on?
- Should there be a lease fee for conservation activities and where will the funding come from?

While many of the philosophical issues were addressed during the program development phase, permanently and convincingly changing the minds and attitudes of people will remain a hurdle for the implementation phase of the program. The Conservation Leasing Program, however, is now available for use and potentially allows private or public entities to take a lead role in identifying, planning, and implementing conservation activities on state-owned aquatic lands in Washington State.

Under the program, entities external to the WDNR can identify conservation projects for state-owned aquatic lands, complete and submit a use authorization application, and potentially lease the property from the WDNR. Lease applicants are required to perform some type of active management and/or research on the property, including habitat improvement, protection, monitoring, and/or outreach. Leases may be up to 50 years in duration depending on the underlying land classification and lease fees are required. Lease applicants must also acquire all necessary regulatory permits from local, state, and/or federal agencies. TNC will be the first entity to enter into a conservation lease through a pilot project in Woodard Bay.

Pilot Project Development

Through a rigorous evaluation process, TNC identified a site on state-owned aquatic lands on which to develop and implement a pilot conservation lease that will restore submerged aquatic habitat. The primary goals of the pilot conservation lease are to:

- Establish and test the conservation lease as a tool;
- Restore native shellfish habitat at the site; and
- Demonstrate methods for native oyster restoration that can be applied to other areas within Puget Sound.

TNC is working in partnership with the WDNR and the University of Washington to develop a conservation plan for the Woodard Bay site.

The pilot conservation lease and associated restoration work is the logical next step in a series of TNC actions designed to identify appropriate sites for submerged lands conservation and restoration, and to develop a program for systematic native oyster restoration Sound-wide. TNC has invested a considerable amount of organization and community resources in the Willamette Valley – Puget Trough – Georgia Basin (WPG) ecoregional assessment process to identify high priority areas in the region for conservation. In addition, the decline of native Olympia oysters (*Ostreola conchaphila*) in the Pacific Northwest has been well documented (Kirby 2004). Olympia oysters are also a State Candidate (WA) and Federal Species of Concern. As such, Olympia oysters offer an attractive target for intertidal and subtidal restoration efforts in areas that were identified in the WPG ecoregional assessment as being important for conservation efforts.

TNC started the search for a pilot lease site with the priority areas identified in the WPG ecoregional assessment. TNC then interviewed shellfish growers, tribes, and shellfish biologists in an effort to identify the most suitable sites for a native oyster restoration project. The search for a site resulted in identifying subtidal habitat in Woodard Bay near Olympia, WA. Significant advantages of the site include:

- Adjacent intertidal and upland areas are permanently protected by the WDNR's Woodard Bay Natural Resource Conservation Area (NRCA);
- Native oyster restoration will not conflict with commercial or tribal harvest interests; and
- A small remnant population of self-sustaining native oysters is present in the area.

Disadvantages of the site are that much of the submerged lands have been degraded by years of commercial log storage, with significant amounts of wood debris remaining in the sediments.

The pilot conservation lease initially included sediment restoration as a project component. Specifically, TNC proposed to remove wood debris from the sediments, identify appropriate areas in and around the mouth of the bay for restoring oyster beds, and to monitor the changes to the benthic ecosystem resulting from the proposed actions. However, as TNC moved towards site investigation and permitting, TNC discovered that significant uncertainty existed within the regulating and regulated communities regarding suitable methods to characterize wood debris, evaluation of liability, and identification of appropriate clean up levels. In light of the uncertainty, TNC elected to move forward with restoring native oysters on leased lands that have little or no wood debris impacts. In a separate effort, TNC will work on evaluating various methods for characterizing wood debris and its impact on benthic communities.

Site Characterization

The pilot conservation lease area is approximately 10 acres in size and is located at the mouth of Woodard Bay, one of two small bays on the western shore of Henderson Inlet of South Puget Sound, Washington. It falls within TNC's Willamette Valley – Puget Trough – Georgia basin (WPG) Ecoregion, and is adjacent to shorelines identified as high priority for conservation. The adjacent Woodard Bay Natural Resource Conservation Area is in a low-density rural area and contains relatively undisturbed habitats including tidelands with salt-marsh communities, old- and second-growth forests, freshwater wetlands, and streams. The upland topography is relatively flat to rolling with a few ephemeral creeks. Nearshore elevations range from sea level to 100 feet. Submerged lands adjacent to the NRCA extend to below -10 ft. below mean lower low water.

Native Olympia oysters and non-native Pacific oysters (*Crassostrea gigas*) are present at the site. There are also clams of various species present including horse clams (*Tresus nuttalli*) and native soft shell clams. The small population of native oysters appears to be sustaining itself in tidal channels inside the NRCA, while the few large Pacific oysters in the area appear to be older relics from either direct plantings or sporadically successful natural sets of spat from commercial beds in Henderson Inlet.

While there is some continued recruitment of native Olympia oysters on large rocks in the tidal channels, the population is very low and appropriate substrate is nearly nonexistent outside of the occasional chunk of rip rap that has fallen into the tide channels. Initial surveys have found very little Pacific oyster recruitment, reducing the possibility of space competition from non-native Pacific species.

Olympia oyster populations in Washington have been drastically reduced due to pollution, over harvest, and degradation of habitat (Cook et al. 2000). The greatest probable threat to this local estuarine habitat and oysters is the extensive disturbance that has occurred in the benthic environment. The project site was historically used as a log dump and storage facility that left a significant amount of wood debris north of the proposed lease site in Chapman Bay. TNC anticipates the condition is similar in Woodard Bay and may be responsible for the lack of appropriate substrates for shellfish.

Securing and Implementing a Conservation Lease

TNC is in the process of applying for a five-year conservation lease from the WDNR for 10 acres of subtidal aquatic lands within the project site. The proposed area for the restoration project also includes portions of the adjacent inter-tidal areas managed by the Woodard Bay NRCA.

While the project site at the mouth of a tidal creek is well suited for shellfish restoration, the sediments are likely contaminated with excess wood debris from historic log storage at the site that will have to be removed before significant shellfish restoration occurs. A consultant/contractor will be hired to:

- Conduct sediment surveys to identify the type, amount, chemical characteristics, and distribution of wood debris in the subtidal and intertidal habitats.
- Conduct biological surveys to be used as a baseline for monitoring and future restoration. TNC will assess biological diversity in the sediments before and after cultch placement, and use clean and disturbed reference sites to measure changes in the benthic community.
- Develop recommendations to characterize the extent of wood debris, assess impacts to the benthic community at the site, and identify possible restoration actions.

Due to the presence of salmonids, seals, a maternity bat colony, and nesting bald eagles at the site, there will probably be only a short window during which in-water work will be done. TNC will work closely with the WDNR to ensure all necessary environmental considerations are included in the work plans.

Cultch Placement

TNC, the National Oceanic and Atmospheric Administration, Washington Department of Ecology, and project partners all support the use of natural restoration techniques for shellfish restoration. TNC's approach is to identify where oysters settle naturally and then improve those habitats to facilitate natural oyster recruitment and reproduction. Working closely with a shellfish expert from the University of Washington and DNR, TNC will:

- Characterize the best locations for cultch placement in terms of depth, temperature, salinity, and relationship to potential spat sources and spat survival.
- Place spat collection plates within and around the site of the leased area and the NRCA to identify where native oyster spats settle naturally and determine natural recruitment potential.
- Measure density of settlement on cultch plates.
- Undertake a series of small-scale placement experiments with juvenile oysters to measure growth in the area relative to salinity gradient, depth, and level of sediment disturbance/contamination.
- Place enough cultch to produce up to one acre of new native oyster habitat in areas identified by the site characterization and selection process as having the highest recruitment and survival potential within the lease site and on the adjacent NRCA.

The proposed cultch placement is intended primarily to benefit existing populations of native Olympia oysters. TNC anticipates increased spat recruitment as a result of the re-introduction of appropriate substrate (oyster shell cultch). TNC predicts that the project will also benefit other benthic invertebrates such as worms and crustaceans, which are important food sources for juvenile salmonids. As oyster populations increase TNC also anticipates long-term benefits to water quality since oysters are filter feeders that concentrate many of the pollutants and pathogens from their surroundings. Extensive monitoring should also provide much needed information about the site that will help inform future restoration actions as well as management decisions about the NRCA.

Project Monitoring and Evaluation Methodology

Placement of cultch and recruitment of native oysters at the pilot site will serve as a test of effectiveness for rehabilitating intertidal and subtidal substrate for restoration of oysters and other reef associated organisms. TNC will assess biological diversity in the sediments before and after cultch placement and oyster recruitment, and will use a mix of reference sites within the inlet that are both clean and disturbed to measure performance.

Conclusion

The WDNR views the future of the Conservation Leasing Program with optimism and uncertainty. The future of the program depends in large part on the results of TNC's pilot lease, in addition to the internal acceptance and external demand for the program. For the program to be successful organizations involved with conservation and research must be willing and able to assume lead roles in protecting and managing aquatic lands in manners similar to long-established upland conservation strategies.

If the pilot conservation lease project is successful at restoring benthic communities and enhancing native oyster survival at the Woodard Bay site, TNC may be able to expand restoration actions to several thousand feet of

shoreline adjacent to the upland NRCA. The project expansion could lead to an integrated terrestrial, intertidal, and submerged nearshore marine reserve at the site and eventually to similar restoration efforts throughout the Puget Sound.

Acknowledgements

Funding for the Pilot Project was provided by The Russell Family Foundation, the National Oceanic and Atmospheric Administration Community Based Restoration Program, the Washington Department of Ecology Coastal Protection Fund, and TNC's Global Marine Initiative.

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